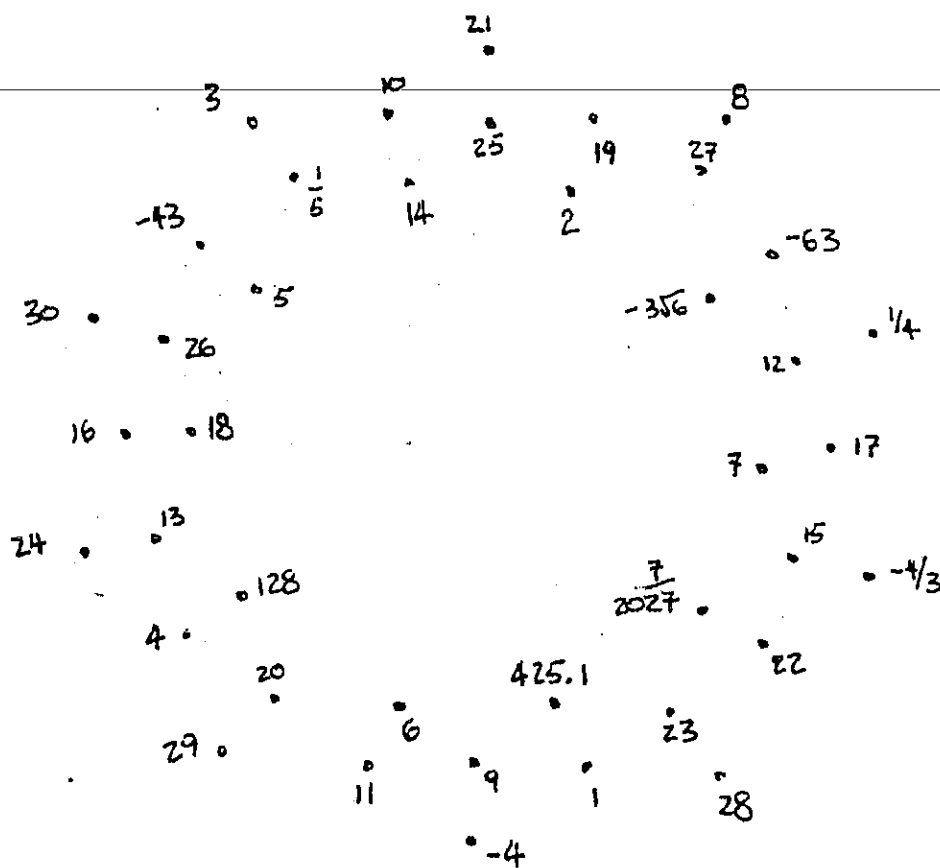


GEOMETRIC SEQUENCES AND SERIES



Each of the problems refer to geometric sequences: a_n = nth term; S_n = the sum of the first n terms; r = common ratio, and is a real number. Connect each problem number with its answer.

1. In 896, 448, 224, ... find a_6 .
2. In $4/81, 4/27, 4/9, \dots$ find a_6 .
3. In $13/16, 13/8, 13/4, \dots$ find $a_6 = 26$.
4. In 29, -29, 29, ... find the 13th term. 29
5. In $5^{-7}, 5^{-6}, 5^{-5}, \dots$ find a_{10} .
6. In 208, -104, 52, ... find a_5 .
7. In $23^{-10}, 23^{-9}, 23^{-8}, \dots$ find $a_{12} = 23$.
8. In 3, -6, 12, ... find S_6 .
9. In $1/27, -1/9, 1/3, \dots$ find S_7 .
10. $a_1 = -81, r = -1/3$, find a_4 .
11. $a_1 = 1/16, a_6 = -64$, find a_4 .

12. $a_3 = -12$, $a_6 = -324$, find a_1 .
13. $a_5 = 10/27$, $r = 1/3$, find a_1 . = 30
14. $S_4 = 40$, $r = 3$, find a_4 .
15. Find the negative geometric mean between 2 and 27.
16. Find the positive geometric mean between 2 and 288. 24
17. If 3 geometric means are inserted between $1/64$ and 4, what is the value of the middle one inserted?

18. If $a_1 = 1500$, $a_5 = 12/5$ and $r > 0$, find r .
19. If $a_1 = 63$, $a_5 = 7/9$ and $r > 0$, find a_2 .
20. If $a_1 = 300$, $r = .3$, find S_4 .

In 21 - 25 supply the next term.

21. -25, 5, -1, _____
22. $4/81$, $-4/27$, $4/9$, _____
23. 32, -16, 8, _____
24. -10, 240, 1280, -160, _____ 20
25. $-1/64$, $1/8$, -1, _____ 8
26. You deposit 1 cent in an antique bank on March 3. Every day thereafter you double the amount deposited. What amount is deposited on March 10th? _____ cents.
27. Referring to problem 26, how does the March 10th deposit compare to the March 12th deposit?

28. You have \$480 hidden under the mattress. On June 13 you spend half the amount, and decide to use half the amount remaining each day thereafter. How much do you spend on June 17th?
_____ dollars.
29. Referring to problem 28, take your June 19th "mattress-allotment" and add it to \$5.25 already in your wallet. Your wallet now contains 9 dollars.
30. What is a_{204} in -43, -43, -43, ... ?